TACTICAL CONTROL SYSTEM PROGRAM

TACTICAL CONTROL SYSTEM
MISSION PLANNER EVALUATION PLAN

Version 1.1
1 May 1997

CHANGE PAGES

The following changes were made to Version 1.0 (dated 15 April 97) to result in Version 1.1 of the TCS Mission Planner Evaluation Plan.

1. References to the industry brief were updated to be past tense, since the brief occurred as scheduled on 21 April 97.
2. The list of items to include in the white papers was replaced with the white paper outline.
3. The phrasing concerning the number of systems to demonstration and integrate was modified to remove the "maximum" terminology.
4. The reference to the Criteria Document was updated to reflect the newly published version of the document.
5. MC-1 and MC-6 were modified to be C-41 regarding unlimited rights.
6. MC-2 and MC-7 were modified to clarify the types of hardware referenced.
7. The time frame for availability of software for demo was changed from two weeks after white paper submission to three weeks in MC-3 and MC-8.
8. C-3 and C-4 were combined into C-3 to reflect the one criteria concerning DII compliance including the use of JMTK.
9. The priority assigned to C-12, concerning data entry validation, was reduced from high to low.
10. The priority assigned to C-39 was increased from medium to high. The wording was also modified to replace "expandable" with "open architecture".
11. Communications planning, C-42, was added.
12. Capitalization/style inconsistencies in the criteria table were made consistent.

EVALUATION PLAN

The Program Office for Cruise Missiles and Unmanned Aerial Vehicles (UAV) (PEO (CU)) is developing a Tactical Control System (TCS) to command and control tactical UAVs and to disseminate the payload to selected Command, Control, Communications, Computers and Intelligence (C4I) systems. A critical element to the TCS development is a "mission planning" system consisting of a route planning segment and payload planning segment. The purpose of this Broad Agency Announcement (BAA) is to identify candidate systems which can be easily modified to support a wide variety of UAVs and their associated payloads.

EVALUATION PROCESS

The evaluation process is a five step process culminating with one route planning segment and one payload planning segment to be flight certified for use during Phase 1 of TCS development. (Phase 1 ends 1 October 1998.)

1. BRIEF TO INDUSTRY

A brief to industry occurred on 21 April 1997 at the Naval Surface Warfare Center, Dahlgren, VA. The brief included a programmatic description of the TCS program and future vision, discussion of the evaluation process and evaluation criteria, a system architecture and system design description, and questions and answers. Each organization was given a copy of the TCS Operational Requirements Document, the TCS Program Management Plan, the TCS Data Server Interface Design Document, the TCS Software Design Document, the Mission Planner Evaluation Plan, the Mission Planner Integration Schedule, and the Mission Planner Criteria Document, to aid the organization in writing a white paper submission.

2. WHITE PAPERS

White papers will be due in the contracting office by COB 9 May 1997. The white paper should use the following outline:
        1.0 Description of Current System
        1.1 Evolution of system
        1.2 Functional architecture
        1.3 Software characteristics
        1.4 Current capabilities/future plans
        1.5 Documentation available
        1.6 Operational users (including POCs)
        2.0 Compatibility with TCS needs
        2.1 Minimum criteria
        2.1.1 Rights granted (unlimited; or what rights at what cost
        2.1.2 Hardware/Operating System options
        2.1.3 Availability for demo
        2.1.4 Types of fixed wing aircraft/payload missions supported
        2.2 Additional criteria

  2.2.1 High priority criteria not met
  2.2.2 Medium priority criteria not met
  2.2.3 Effort to add remaining high and medium priority functionality
  2.3 Compatibility with TCS architecture

3. COARSE EVALUATION

Based upon the white papers, each system will be evaluated according to the established criteria. This evaluation is in two parts. The first evaluation is a set of minimum criteria. Any system that does not meet all of these criteria will not be considered in any future evaluation phases. Systems meeting the minimum criteria will then be evaluated on the Additional Screening criteria. Based upon the scores, a goal of five systems will be selected for further analysis.

Note: The descriptions of the criteria and scoring follow on pages 4-6 of this document.

4. FINE EVALUATION

A fact finding visit will be made to each organization identified as a result of the coarse evaluation. The plan is for each fact finding visit to be two days in length. The purpose of the fact finding visit is learn about the software development process, evaluate the system functionality relative to TCS needs, better understand the software architecture and design, inspect the available documentation, and evaluate the ease of integration into TCS. Each organization should provide a plan, schedule, and a Rough Order of Magnitude (ROM) cost to implement the high and medium requirements. A demo will be required with each visit. At the conclusion of the fine evaluation, two systems will be selected for the integration into TCS.

5. FINAL EVALUATION

After each system is integrated into TCS, an evaluation of each system will be conducted. This evaluation will include functional testing, user friendliness, and military suitability. Input from military users will be requested. One route planner and one payload planner will be used for flight certification and support command and control of the UAV for Phase 1.

EVALUATION TEAM

The evaluation team will consist of no more than seven government personnel representing the following disciplines:
  a. Leader/coordinator*
  b. System requirements/system test
  c. Software requirements
  d. Software architecture/development

*This person could be "double hatted" and represent one of the selected disciplines.

PROPOSED EVALUATION AND SCORING CRITERIA FOR A ROUTE AND PAYLOAD PLANNING SYSTEM

These criteria tables will be used to determine scores of the route and payload planners considered for selection. For more in-depth explanations of each criteria, see the TCS Mission Planning Criteria Document - Version 1.1 dated 4/30/97.

I.   Minimum Criteria

Scoring:
          1   capability has been demonstrated
          0   capability has not been demonstrated

In order for a particular route planner to be considered for selection, it must have a score of "1" for each of the minimum criteria listed under Route Planning Software. (i.e., The route planner must have a total score of 4 for MC-2 through MC-5.)

In order for a particular payload planner to be considered for selection, it must have a score of "1" for each of the minimum criteria listed under Payload Planning Software. (i.e., The payload planner must have a total score of 3 for MC-7 through MC-9.)

No.	MINIMUM CRITERIA	Score
	Route Planning Software	
MC-2	Route planning software operational on specified TAC-4 or CHS-II	
MC-3	Route planning software available for a demo within three weeks of white paper submission	
MC-4	Applicable to fixed wing aircraft	
MC-5	Capable of supporting different fixed wing aircraft by changing the air vehicle related data	
	Payload Planning Software	
MC-7	Payload planning software operational on specified TAC-4 or CHS-II	
MC-8	Payload planning software available for a demo within two weeks of white paper submission	
MC-9	Capable of planning an Electro-Optical/Infrared (EO/IR) mission	

II.   Additional Screening Criteria

If the planner attains the minimum criteria, it may be considered for selection based on the scoring of the additional criteria.

Scoring:

    for high priority additional criteria

        11-20 capability has been demonstrated

        1-10 could be modified easily to conform to the selected criteria

        0 does not appear to meet this criteria

    for medium priority additional criteria

        6-10 capability has been demonstrated

        1-5 could be modified easily to conform to the selected criteria

        0 does not appear to meet this criteria

    for low priority additional criteria

        1-5 capability has been demonstrated

        0 does not appear to meet this criteria

No.	ADDITIONAL CRITERIA	Priority	Score
	System Constraints		
C-1	Distributable to Department of Defense (DoD) sites worldwide and to foreign nationals	H	
C-2	Interoperable with Tactical Aircraft Mission Planning System (TAMPS) and/or Air Force Mission Support System (AFMSS) and/or Aviation Mission Planning System (AMPS)	M	
C-3	Defense Information Infrastructure (DII) compliant; including the use of Joint Mapping Tool Kit (JMTK) for Map loading/unloading/manipulation	H	
C-5	Documentation available	M	
	Software Requirements		
	General Requirements		
C-41	Unlimited rights for route and payload planning software	H	
C-6	Integrated or separate route and payload planning	H	
C-7	Replan route or payload tasking during all phases of operational mission execution (dynamic retasking)	H	
C-8	AV model for use in planning and validation	L	
C-9	Hardcopy route planning data	L	
C-10	Multiple systems of units and coordinate systems available	M	
C-11	Distributed tasking	L	
C-12	Data entry validation	L	
C-13	Store/retrieve/delete mission plans	H	
	Create/Modify Mission Plans		
	Mission Planning Tools		
C-14	Flight profile vs. terrain profile display (using DTED)	M	
C-15	Datalink coverage overlay (using DTED)	M	
C-16	Threat area overlay	L	

	Route Planning		
C-17	Parameter initialization: Environmental parameters	H	
C-18	Parameter initialization: AV/Payload parameters	H	
C-19	Parameter initialization: Mission parameters	H	
C-20	Fuel, distance and time calculations	H	
C-21	Waypoint and flightpath graphical displays	H	
C-22	Waypoint creation/movement/deletion	H	
C-23	Waypoint information definition	H	
C-24	Route optimization	L	
	Payload Planning		
C-25	Plan Synthetic Aperture Radar (SAR) missions	M	
C-26	EO/IR payload control	H	
C-27	Payload pointing commands	H	
C-28	Payload search visual acuity range	L	
C-29	Payload FOV swath display	H	
	Communications Planning		
C-42	Communications planning	M	
	Create Emergency (Return Home) Plan		
C-30	Waypoint and flightpath graphical displays	H	
C-31	Waypoint creation/movement/deletion	H	
	Validate Mission Plan		
C-32	Validate mission plan definition	H	
C-33	Weight and balance take off checks	M	
C-34	Automatic safeguards to prevent unsafe flight	H	
C-35	Mission plan achievability	M	
C-36	Datalink constraints: LOS visibility check	H	
C-37	Datalink constraints: Satellite communication check	L	
	Upgrade Capability		
C-38	Open architecture to support future payloads and payload capabilities	H	
C-39	Open architecture to support rotary wing, VTOL, or other UAV systems	H	
C-40	Portable to other military computing platforms	L	